Small
Business
Innovation
Research

High Power, Tunable 828 and 935 nm Distributed Feedback and Bragg Reflector Lasers

Sensors Unlimited, Inc.

Princeton, NJ

INNOVATION

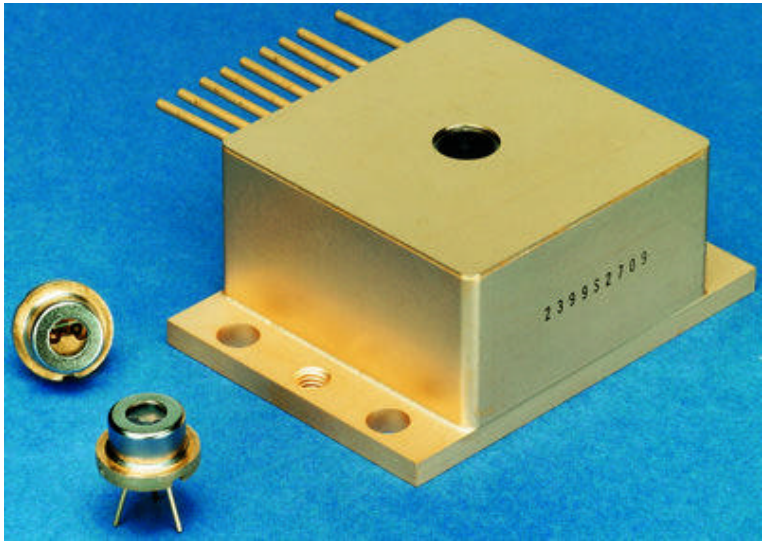
Developed high power, tunable diode laser utilizing broadened-waveguide (BWG) design.

ACCOMPLISHMENTS

- Developed single frequency, high-power, tunable Distributed Feedback (DFB) and Distributed Bragg Reflector (DBR) diode lasers that operate at 825 and 935 nm at 50 mW output.
- The wavelength tuning is at least an order of magnitude larger than that of a typical DFB laser that makes the 935 nm laser an ideal source for trace water vapor detection using laser absorption spectroscopy. The University of Illinois assisted in the production of this laser.
- Designed and utilized aluminum-free InGaAsP compounds that have a significant advantage for high-power applications.

GOVERNMENT SCIENCE/APPLICATIONS

- Technology will support future NASA miniature lidar instrument for remote sensing of Martian atmospheric water vapor from the surface Mars.



Distributed Feedback Diode Laser

COMMERCIALIZATION

- Sensors Unlimited, Inc. has a strong history in the laser diode business. Since 1992 the company has had a strategic relationship with the Sarnoff Corp. to develop semiconductor laser diodes with the aid of SBIR programs, specifically targeted at the laser absorption spectroscopy trace-gas sensing markets.

Goddard Space Flight Center

1996 Phase II, SS5-047; 11/1/00

Points of Contact:
- NASA - Mike Krainak; 301-286-2646
- Sensors Unlimited, Inc.- Koos Vermaak - 609-520-0610